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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,579	05/23/2001	Keiichi Kitagawa	L9289.01139	9830

7590 08/02/2004

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EXAMINER

TSE, YOUNG TOI

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,579

Applicant(s)

KITAGAWA ET AL.

Examiner

YOUNG T. TSE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: for the formality of the application under the present office practice, applicant(s) is required to replace "Claims" with "I or We Claim", "The Invention Claimed Is" (or the equivalent) before the Claims part of the specification of the instant application. See MPEP 608.01(m). Appropriate correction is required.

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3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2, 4-6 and 9-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification fails to explain the difference between the I/Q distortion & synchronous shift & phase compensation filter 105 and the I/Q distortion compensation circuit 108 of Figure 2 as recited in claims 2 and 4. Although the specification explain that the I/Q distortion compensation circuit 108 in the transmitter may include a filter having the same configuration as that of the digital filter 105 of the receiver on page 7, line 26 to page 8, line 10 and page 8, line 27 to page 9, line 6. As shown in Figure 2, the I/Q distortion & synchronous shift & phase compensation filter 105 is connected between the Dc offset compensation circuit 104 and the BB decode processing section

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106 while the I/Q distortion compensation circuit 108 is connected between the BB transmission processing section 107 and the D/A converter 109. Therefore, and the I/Q distortion compensation circuit 108 should not have the same circuitry as shown in Figure 3 since they operate and perform different functions. Further, claim 2 recites the filter of the transmitter for given an inverse characteristic for compensating distortion given to a transmission signal owing to D/A conversion. The specification also fails to describe what is the inverse characteristic for the compensation distortion.

The claimed subject matter of claim 4 appears correspond to the disclosure of Figure 3, however, claim 4 depends upon claim 1 instead of claim 2.

The claimed subject matter of claim 6 does not correspond to the specification as mentioned on page 6, lines 21-28.

Claim 9 appears correspond to another embodiment of an equalizer which is different than the rest of the claims as shown in the disclosure of Figures 2 and 3.

Further, claims 1 and 11-12 recites a transmit-receive apparatus comprising a first digital filter and claim 9 recites a transmit-receive apparatus comprising an equalizer, however, the first digital filter or the equalizer is considered as a single means. A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known

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to the inventor). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See MPEP 2164.08(a).

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 3-8 and 11-12 recite a transmit-receive apparatus, however, it is unclear the first digital filter belongs to the transmit apparatus or the receive apparatus.

Claim 9 recites a transmit-receive apparatus, however, it is unclear the equalizer belongs to the transmit apparatus or the receive apparatus.

In claim 2, lines 7-10, the phrase "... inverse characteristic for compensating distortion given to a transmission signal owing to D/A conversion" is not understood.

In claim 3 (lines 3-4), claim 4 (lines 2-4) and claim 9 (lines 4-7), the phrases "wherein said first and said second digital filters also function as another filter in said apparatus severally", "wherein said first and said second digital filters severally include a filter to be configured by setting of a filter factor" and "... coefficient estimation of tap coefficient sets concerning an in-phase component and a quadrature components of a filter output in independently performed" are also not understood.

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In claim 3 (line 2), claim 4 (lines 2, 6 and 8), claim 6 (line 4), claim 7 (line 3) and claim 8 (line 2), the phrases "said second digital filter" and "said reception signal" lack antecedent basis.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 1 and 11-12 are rejected under 35 U.S.C. 102(a) as being anticipated by the prior art Figure 1 of the instant application.

Referring to the prior art Figure 1 of the instant application, the transmit-receive apparatus includes a phase compensation filter 7 and a synchronous shift compensation filter 8 for filtering the digitized distortion data from a DC offset compensation circuit 5 and an I/Q distortion compensation circuit 6 through an antenna 1, an analog I/Q distortion compensation circuit 3 and an A/D converter 4.

With respect to claims 1 and 11-12, the phase compensation filter 7 and the synchronous shift compensation filter 8 together correspond to the first digital filter for compensating distortion and synchronous shift in a received signal through the antenna 1 and the A/D converter 4.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamaguchi et al., Tan et al., and Mathe are related to a transmitter and receiver circuits including filters for compensating DC offset distortion of a received signal.

Bhatt et al. and Velez et al. are related to an equalizer including a coefficient generator for generating a number of real and imaginary coefficient values.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Young Tse** whose telephone number is **(703) 305-4736**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jay Patel**, can be reached at **(703) 308-7728**.

Any response to this action should be mailed to:

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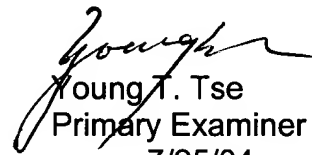
or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Young T. Tse
Primary Examiner
7/25/04